

What is claimed is:

1. A socket comprising:
 - a socket housing having a surface mount region for an electrical device, and
 - at least one rigid bar secured in a groove in the socket housing and contiguous the surface mount region to thereby ensure the surface mount region is flat and remains flattened in varying ambient conditions.
2. The socket as claimed in claim 1, wherein the groove is a U-shaped channel.
3. The socket as claimed in claim 2, wherein the rigid bar is a rod.
4. The socket as claimed in claim 1, wherein there is provided a second rigid bar secured in another groove in the housing substantially parallel to the rigid bar and disposed adjacent the surface mount region such that an electrical device positioned on the surface mount region is disposed between the one rigid bar and the second rigid bar.
5. The socket as claimed in claim 2 wherein the grooves are U-shaped channels.
6. The socket as claimed in claim 2, wherein each rigid bar is a rod.
7. An electrical socket to provide a flat surface mount region for an electrical device, the socket comprising:
 - a U-shaped rigid bar secured in a mating U-shaped groove such that the surface mount region for the electrical device is disposed within the U-shape of the U-shaped bar to thereby insure the surface mount region is flat and remains flattened in varying ambient conditions.
8. The socket as claimed in claim 7, wherein the U-shaped groove is a channel having a U-shaped cross-section.

9. The socket as claimed in claim 8, wherein the U-shaped rigid bar has a rod shaped cross-section.

10. A zero insertion force socket that provides a flat surface mount region for an electrical device, the socket comprising:

- a top plate adapted to provide a flat surface mount region, the top plate having a plurality of pin insertion apertures adapted to permit insertion of electrical pin connections from the electrical device,
- a base having a plurality of receptacles adapted to receive the pin electrical connections of the electrical device that extend through the apertures in the top plate and into the receptacles, the top plate is slidably mounted on the base,
- a cam mechanism is secured to the base and cooperates with the top plate to slide the top plate over the base between an open and closed position,
- a lever is coupled to the cam mechanism and is pivotally movable from an open position to a closed position to permit in the open position the insertion of the electrical pin connections of the electrical device through the top plate apertures and into the base receptacles, whereupon pivotal movement of the lever causes the top plate to move in relation to the base to a closed position, thereby causing the electrical pin connectors to be secured in the receptacles in the base, and
- the flat surface mount region includes a first groove in the top plate that is contiguous to the surface mount region, whereupon movement of the lever from the open to closed position causes the lever to securely engage the groove in the top plate to thereby ensure that the top plate and the surface mount region is flat and remains flattened in varying ambient environments.

11. The socket as claimed in claim 10, wherein the flattened surface mount region in the top plate includes adjacent the surface mount region a rigid bar secured in a second

groove parallel to the first groove such that an electrical device positioned on the surface mount region is disposed between the rigid bar in the second groove and the lever when the lever is in the closed position and occupying the first groove.

12. The socket as claimed in claim 11, wherein the grooves are U-shaped channels.

13. The socket as claimed in claim 12, wherein the rigid bar and lever are rod shaped.

14. A zero insertion force socket that may be actuated and provides a flat surface mount region for an electrical device, the socket comprising:

- a top plate adapted to provide a flat surface mount region, the top plate having a plurality of pin insertion apertures adapted to permit insertion of electrical pin connections from the electrical device,
- a base having a plurality of receptacles adapted to receive the pin electrical connections of the electrical device that extend through the apertures in the top plate and into the receptacles, the top plate is slidably mounted on the base,
- a cam mechanism is secured to the base and cooperates with the top plate to slide the top plate over the base between an open and closed position,
- a U-shaped lever is coupled to the cam mechanism at ends of legs of the U-shaped lever and is pivotally movable from an open position to a closed position to permit in the open position the insertion of the electrical pin connections of the electrical device through the plate apertures and into the base receptacles whereupon pivotal movement of the lever to the closed position causes the electrical pin connectors to be secured in the receptacles in the base, and
- the top plate is provided with a U-shaped groove such that the surface mount region for the electrical device is disposed within legs of the U-shaped groove to thereby cause, upon movement of the lever from the

open to the closed position, the U-shaped lever to securely engage the U-shaped groove in the top plate and thereby ensure that the top plate and the surface mount region is flat and remains flattened in varying ambient conditions.

15. The socket as claimed in claim 14, wherein the U-shaped grooves have a U-shaped cross-section.

16. The socket as claimed in claim 15, wherein U-shaped lever has a rod shaped cross section.

17. A method comprising:

- forming at least one groove in a socket housing contiguous to a surface mount region for an electrical device, and
- inserting a rigid bar in the groove to thereby ensure that the surface mount region is flat and remains flat in varying ambient conditions.

18. The method as claimed in claim 17, wherein the forming of the groove comprises:

- providing the groove with a U-shaped cross-section.

19. The method as claimed in claim 18, wherein the rigid bar comprises:

- a rod.

20 A method comprising:

- forming a pair of grooves in a socket housing contiguous to a surface mount region for an electrical devise, and
- inserting rigid bars in the grooves to thereby ensure the surface mount region is flat and remains flattened in varying ambient conditions.

21. The method as claimed in claim 20, wherein the forming of the grooves comprises:

- providing the grooves with a U-shaped cross-section.

22. The method as claimed in claim 21, wherein the rigid bars comprise:

- rods.

23. A method comprising:

- forming a U-shaped groove in a socket housing contiguous to a surface mount region for an electrical device, and
- inserting a U-shaped rigid bar in a mating relationship in the U-shaped groove to provide a surface mount region for an electrical device within the U-shape of the U-shaped bar in the U-shaped groove to thereby ensure that the surface mount region is flat and remains flattened in varying ambient conditions.

24. The method as claimed in claim 23, wherein the forming of the U-shaped groove comprises:

- providing the U-shaped groove with a U-shaped cross-section.

25. The method as claimed in claim 24, wherein the rigid bar comprises:

- a rod.

26. A method comprising:

- establishing a flat surface mount region in a zero insertion force socket for an electrical device, wherein the zero insertion force socket comprises:
- providing a socket housing having a top plate adapted to provide the flat surface mount region, the top plate providing a plurality of pin insertion apertures adapted to provide for insertion of electrical pin connections from the electrical device,

- providing a base that has a plurality of receptacles adapted to receive pin electrical connections provided by the electrical device, the pin connections extending through the apertures in the top plate and into the receptacles,
 - providing the socket housing top plate and base with the capacity to slide relative to each other,
 - providing a cam mechanism that is secured to the base and cooperates with the top plate to slide the top plate over the base from an open to a closed position,
 - providing a lever coupled to the cam mechanism, wherein the lever is pivotally movable from an open position to a closed position to provide in the open position the insertion of the electrical pin connectors of the electrical device through the top plate apertures and into the base receptacles, whereupon pivotal movement of the lever to the closed position causing the electrical pin connectors to be secured in the receptacles in the base, and
 - forming a groove in the socket top plate of the socket housing contiguous to the surface mount region, and
 - moving the lever from its open position to closed position to thereby cause the lever to securely engage the groove in the top plate and to thereby ensure that the top plate and surface mount region are flat and remain flattened in varying ambient environments.
27. The method as claimed in claim 26, wherein the lever and groove comprise :
- a rod and
 - a groove having a U-shaped cross-section.
28. A method comprising:
- establishing a flat surface mount region in a zero insertion force socket for an electrical device, wherein the zero insertion force socket comprises:

- providing a socket housing having a top plate adapted to provide the flat surface mount region, the top plate providing a plurality of pin insertion apertures adapted to provide for the insertion of electrical pin connections from the electrical device,
- providing a base that has a plurality of receptacles adapted to receive pin electrical connections provided by the electrical device, the pin connections extending through the apertures in the top plate and into the receptacles,
- providing the socket housing top plate and base with the capacity to slide relative to each other,
- providing a cam mechanism that is secured to the base and cooperates with the top plate to slide the top plate over the base from an open to a closed position,
- providing a U-shaped lever coupled to the cam mechanism at the ends of the U-shaped lever, wherein the U-shaped lever is pivotally movable from an open position to a closed position to provide in the open position the insertion of the electrical pin connections of the electrical device through the top plate apertures and into the base receptacles, whereupon pivotal movement of the lever to the closed position causes the electrical pin connectors to be secured in the receptacles in the base,
- forming a U-shaped groove in the socket top plate of the socket housing such that the surface mount region for the electrical device is disposed within the legs of the U-shaped groove, and
- moving the U-shaped lever from its open position to a closed position, thereby causing the U-shaped lever to securely engage the U-shaped groove in the top plate when the U-shaped lever is moved from the open to the closed position, thereby ensuring that the top plate and surface mount region is flat and remains flattened in varying ambient conditions.

29. The method as claimed in claim 28, wherein the U-shaped lever comprises:

- a rod formed in a U-shape.

30. The method as claimed in claim 29, wherein the U-shaped groove comprises:

- a groove having a U-shaped cross-section.